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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LE, JOHN H	

ART UNIT	PAPER NUMBER
2863	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,149	NAM, YOUNG-DONG	
	Examiner	Art Unit	
	John H. Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. This office action is in response to applicant's amendment received on 07/30/2007.

Claims 1, 3, and 4 have been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as obvious over Morton (USP 4,306,113).

Regarding claim 1, Morton discloses a filter characteristic measuring method (e.g. Col.2, lines 39-40), comprising the steps of: (test signal generator 2602) generating an impulse signal (e.g. Fig.26, Col.24, lines 63-66, Col.25, lines 23-28); applying the impulse signal (from test signal generator 2602) to an analog filter (equalizer filter 2603) (e.g. Figs.14, 26, Col.25, lines 23-28); and measuring a gain of the analog filter (equalizer filter) and a frequency characteristic by using an output of the analog filter (equalizer filter) (e.g. Col.19, lines 7-11) for testing an operation of the DUT (test unit) in a product test (e.g. Col.31, lines 8-32).

Although Morton is silent on the teaching of applying the impulse signal to a DUT having an analog filter (equalizer filter) through a digital channel and measuring a gain

of the analog filter (equalizer filter) in the DUT, however it would have been obvious to one of ordinary skill at the time the invention was made to teach the analog filter (equalizer filter) inside the DUT and applying the impulse signal to a DUT having an analog filter (equalizer filter) through a digital channel since the impulse test waves generated by the test signal generator 2602 pass to the equalizer 2603 and from the equalizer 2603 to a sample and hold circuit 2604 which samples the amplitude of the resulting impulse at an instant during the occurrence of the impulse (Col.25, lines 23-28) can be used for obtaining a product test as intended.

Regarding claim 2, Morton discloses an equalizing filter (Fig.14).

Regarding claim 3, Morton discloses an analog filter (equalizing filter) characteristic measuring method (e.g. Col.2, lines 39-40), comprising: applying an impulse signal (from test signal generator 2602) to an equalizing filter (2603) by using a digital channel of an automatic tester (test signal generator 2602) (e.g. Figs.14, 26, Col.25, lines 23-28), and performing a differential and a fast Fourier transform (FFT) operation on the output response of the equalization filter (e.g. Col.27, lines 1-40) so as to measure a boosting gain and a frequency response for testing an operation of the equalizing filter (e.g. Col.14, lines 30-37, Col.19, lines 7-11, Col.31, lines 56-57) in a product test (e.g. Col.31, lines 8-32).

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over over Behrens et al. (USP 5,903,857) in view of Becker et al. (USP 5,929,628).

Regarding claim 4, Behrens et al. disclose a system for measuring a characteristic of a filter in a DUT employ an analog filter (equalizing filter 26) (e.g. Col.2,

lines 55-60), said system comprising: a digital channel (22) for providing an impulse signal (a binary sequence b(n) 8) without applying a sine wave to the analog filter (20) of the DUT (e.g. Fig.2, Col.4, lines 34-49, Col.4, line64-Col.5, lines 57); a digitizer (26) for receiving an output signal of the analog filter (22) in response to the impulse signal so as to measure the characteristic of the filter (e.g. Fig.2, Col.4, lines 34-49, Col.4, line 64-Col.5, lines 57); controller (50) for controlling the digital channel (22) .

Behrens et al. fail to teach a controller for controlling the digitizer.

Becker et al. teach a controller (206) for controlling the digital channel (212) and the digitizer (220)(see Fig.2A).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a controller for controlling the digital channel and the digitizer as taught by Becker et al. in a system for measuring a characteristic of a filter in a DUT of Behrens et al. for the purpose of providing a tester that can automatically correct signal amplitude error introduced in its channel and data acquisition circuitry (Becker et al., Col.3, lines 14-17).

Regarding claim 5, Behrens et al. fail to teach the digitizer comprises: an anti-aliasing filter for antialiasing-filtering an output of the filter; an analog to digital (A/D) converter for converting a filter output outputted from the anti-aliasing filter into digital data; a memory for capturing the digital data outputted from the A/D converter at a determined storage region; a digital signal processing (DSP) for processing in signal the digital data captured at the memory; and a digital filter for receiving the process signal outputted from the DSP and digitally filtering the process signal..

Becker et al. teach the digitizer comprises: an anti-aliasing (287); an analog to digital (A/D) converter (260); a memory (262); a digital signal processing (DSP); and a digital filter (208)(e.g. Fig.2A, Col.8, lines 20-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an anti-aliasing (287); an analog to digital (A/D) converter (260); a memory (262); a digital signal processing (DSP); and a digital filter (208) as taught by Becker et al. in a system for measuring a characteristic of a filter in a DUT of Behrens et al. for the purpose of providing a tester that can automatically correct signal amplitude error introduced in its channel and data acquisition circuitry (Becker et al., Col.3, lines 14-17).

Regarding claim 6, Behrens et al. teach the analog filter is an equalizing filter (e.g. Fig.2, Col.2, lines 55-60, Col.4, lines 64-67).

Response to Arguments

5. Applicant's arguments filed 07/30/2007 have been fully considered but they are not persuasive.

-Applicant argues that the prior did not teach "applying the impulse signal to a DUT having an analog filter through a digital channel" as cited in claim 1.

Examiner position is that Furukawa et al. disclose steps of applying the impulse signal (digital signal) to a DUT (Col.5, lines 24-32) having an analog filter (The DUT 100 shown in FIG. 1 includes analog circuits such as a low pass filter (LPF)) (Col.1, lines 30-33) through a digital channel (waveform shaper 17) (e.g. Fig. 4, Col.6, lines 6-8).

-Applicant argues that the prior did not teach, "applying the impulse signal to an equalizing filter by using a digital channel of an automatic tester" as cited in claim 3.

Examiner position is that Behrens et al. disclose steps of applying an impulse signal (a binary sequence b(n) 8) to an equalizing filter (26) by using a digital channel of an automatic tester (e.g. Fig.2, Col.4, lines 34-49, Col.4, line64-Col.5, lines 57).

-Applicant argues that the prior did not teach, "system for measuring a characteristic of a filter in a DUT employing an analog filter, said system comprising: a digital channel for providing an impulse signal without applying a sine wave to the analog filter of DUT" as cited in claim 4.

Examiner position is that Furukawa et al. disclose a system for measuring a characteristic of a filter in a DUT employ an analog filter (e.g. Col.2, lines 2-5), said system comprising: a digital channel (test pattern generator (103, 13), waveform shaper 17) for providing an impulse signal (digital signal) without applying a sine wave to the analog filter of the DUT (e.g. Figs.1, 4, Col.1, lines 48-51, Col.5, lines 24-32).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Specifically Morton has been added to the other ground of rejection.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Le whose telephone number is 571 272 2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571 272 2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

October 15, 2007

JOHN E. BARLOW, JR.
PRIMARY EXAMINER
GROUP 2800